



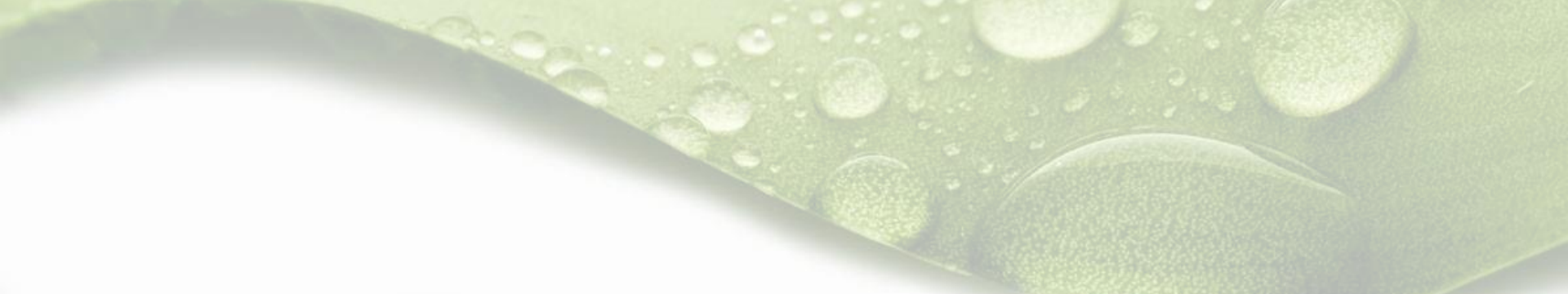
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# A Preliminary Analysis of Recovered Material Exported from California Ports

Presented by  
Larry Stephens  
November 19, 2012

- 
- This study shows the amount of exports of recoverable materials and commodities from California ports and their respective destinations.
  - Recoverable materials are scrap from manufacturing processing and recyclable material recovered from the waste stream.
  - The recyclable export market is very important to the economy of California.

- The data in this report is primarily restricted to sea-borne shipments of recyclables and does not take into account truck, rail and air tonnage because of data reliability issues.
- The report primarily uses data obtained from Wisertrade, a company that aggregates U.S. Customs information from hundreds of countries.

## ➤ Overview

- California ports export more than \$9.5 billion dollars in waste and scrap compared to a total of \$159 billion in sea-borne exports in 2011.
- The vast majority of exported material by tonnage is paper.
- China receives most of this tonnage.
- Metals make up more than 80% of the dollar value.

- China and other East Asian ports receive the great majority of recycled plastic and metals exported from California.
- China and East Asia likely use most of the material.
- Some of the material may be further trans-shipped from the original destination ports.
- Rough estimates for some selected scrap material and recyclables were made about how much originated from California.
- An estimated 60% to 80% of recyclable tons originate from within California.

- Plastics have a 6% share in the S&R market by ton and dollar value
- The top CA export categories in tons included:
  - Computers and electronics at \$46 billion
  - Transportation equipment at \$15 billion
  - Machinery at \$15 billion
  - Scrap and Recycle exports at 9.5 billion



# Recyclable Materials Exported from California Ports

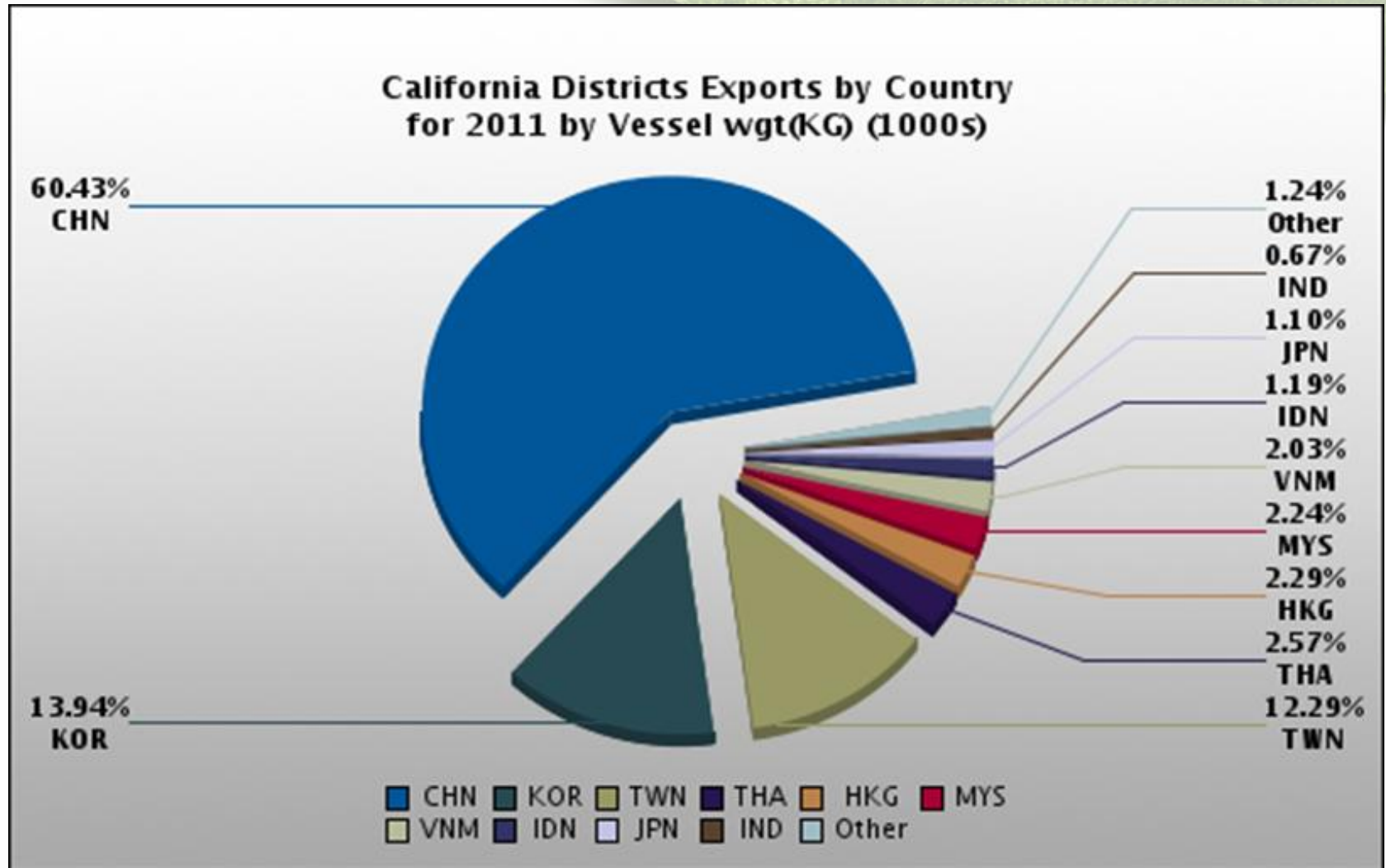
# All Recyclable Exports for 2011

- The All Recyclable slide shows that California exports over 61 percent of the total scrap and recyclables to China.
- Korea has approx. 14 percent
- Taiwan has approx. 13 percent

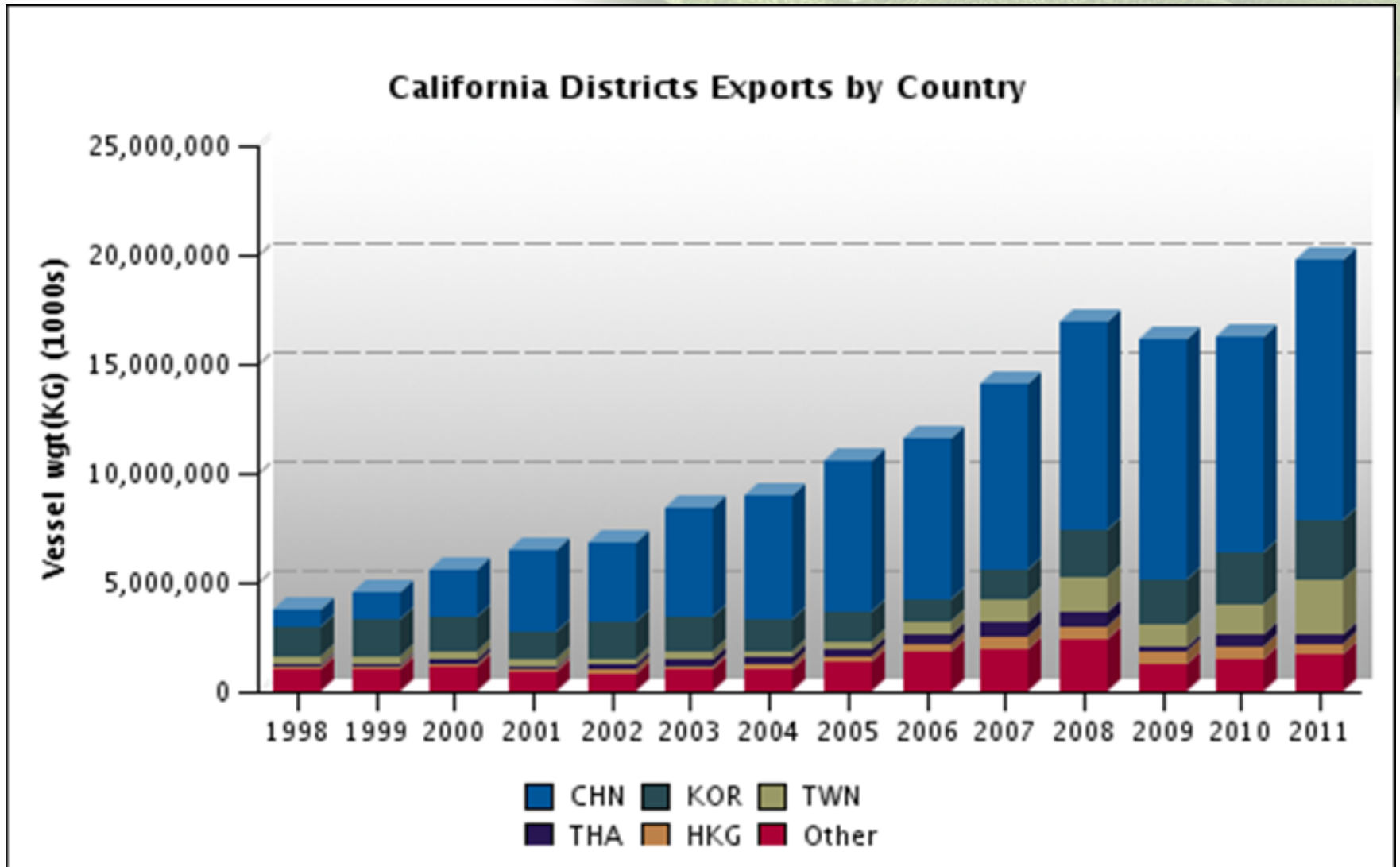
# All Recyclable Exports for 2011

- Exported scrap and recyclable tonnages have been increasing each year except for the recession years 2009-2010.
- Tonnage amounts for exports recovered in 2011.

# All Recyclable Exports for 2011



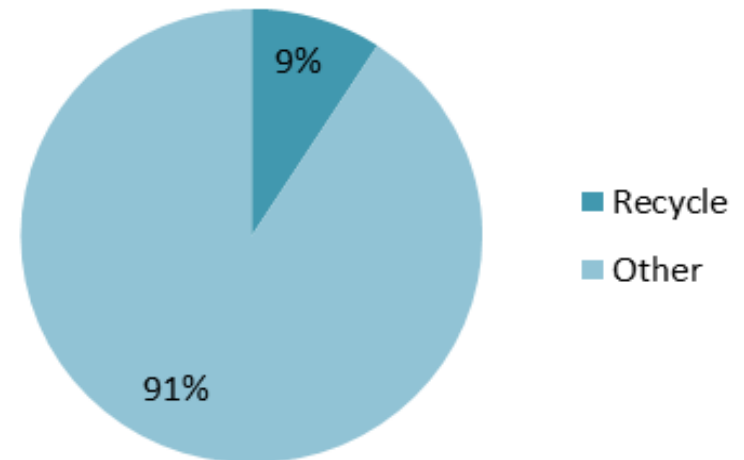
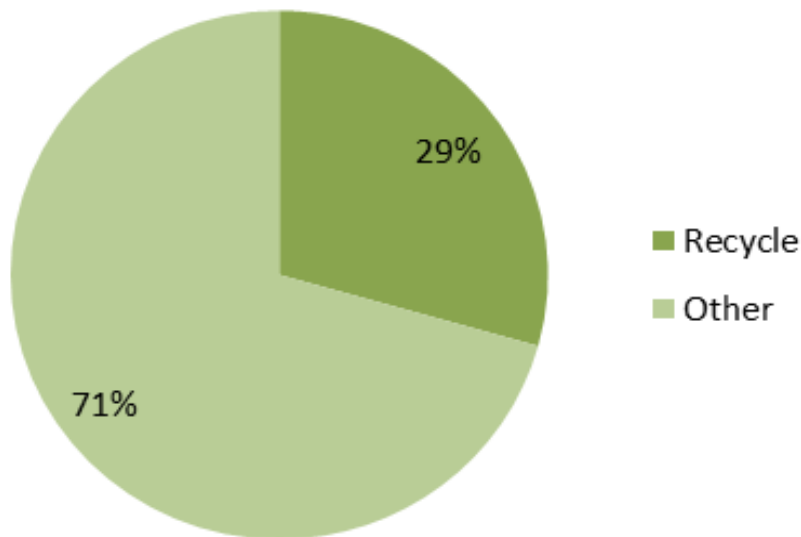
# All Recyclable Exports



## **Recyclables Share of All CA Exports by Tonnage and Dollar Value**

- California's total exports amounted to \$159 billion in 2011.
- Scrap and Recycled product (S&R) accounted for over \$9.5 billion in 2011 (sea-borne) exports.
- California exported 75 million tons of goods and materials (sea-borne).
- S&R accounted for almost 22 million tons or 29% of the market.
- Mixed paper is 15% of the market and 50% as a share of total exports.

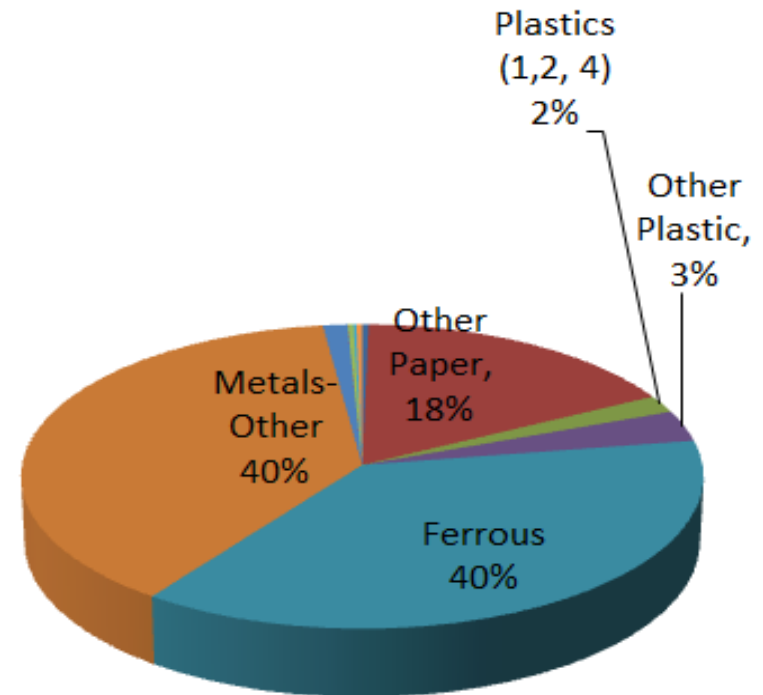
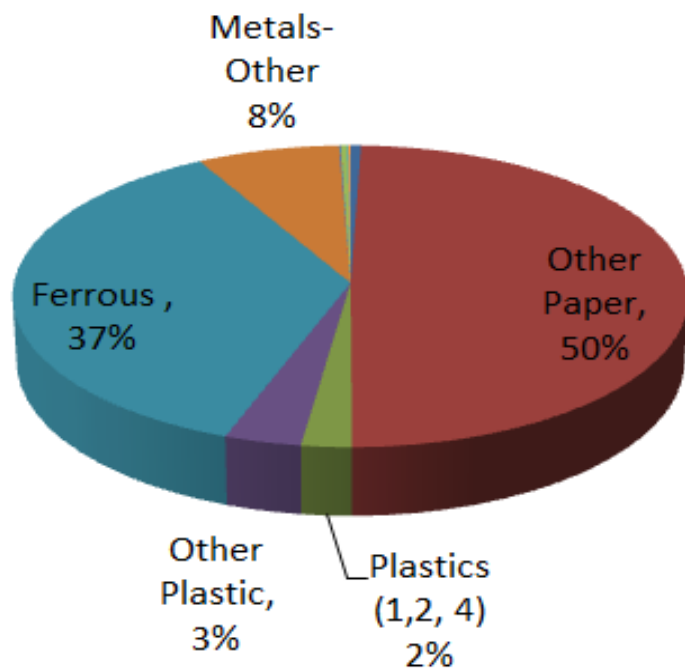
# Recyclables Share of All CA Exports by Tonnage (Left) and Dollar Value (Right)



## 2011 All CA Recyclables by Category

- All paper grades combined make up more than 50 % of the recyclables market in terms of tons.
- Paper makes up less than 19% of the dollar value in the recyclables market.
- The various grades of metals make up 46% of the recyclables market by weight but 80% by dollar value.
- Copper wire is only about 1% the market by total weight and value.
- Copper has the largest value per ton at over \$7,000 per ton.

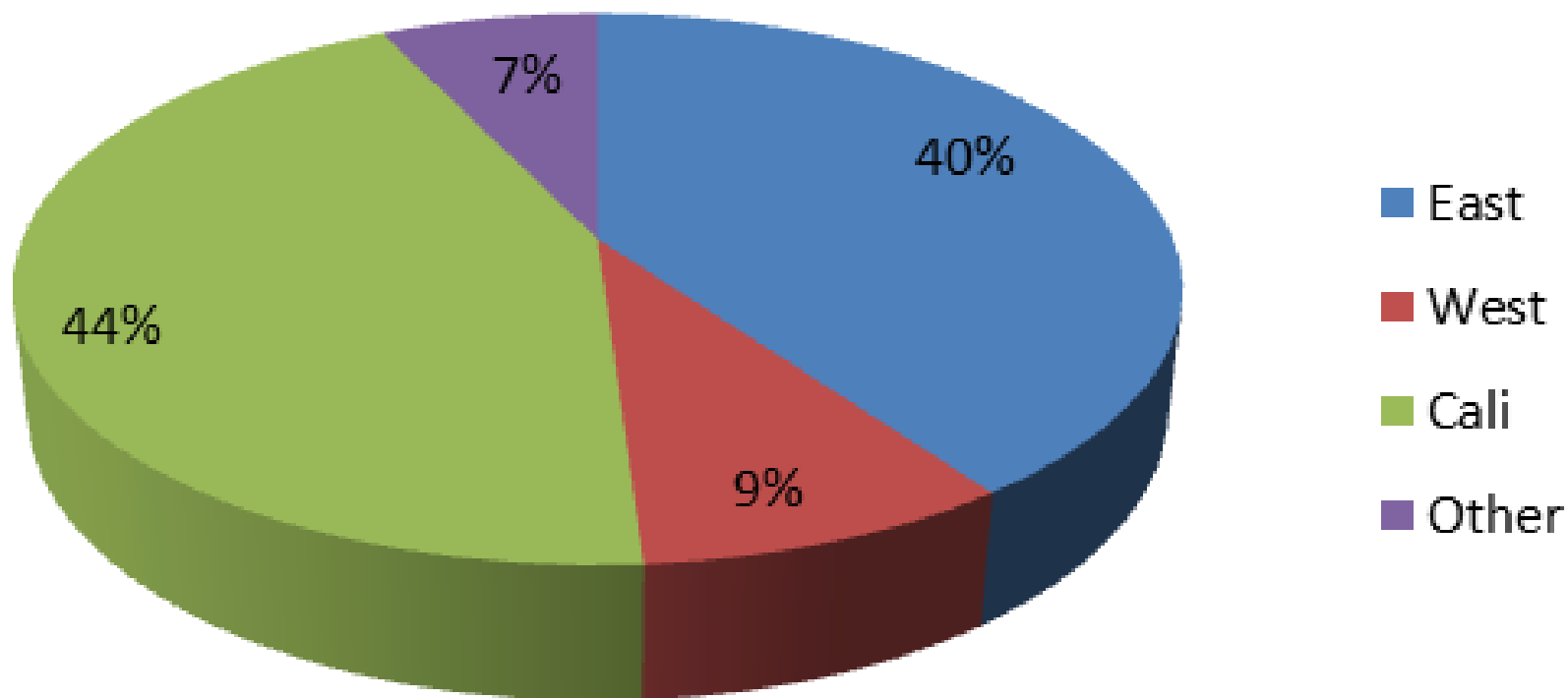
# 2011 All CA Recyclables by Category in Tons (Left) and Dollar Value (Right)



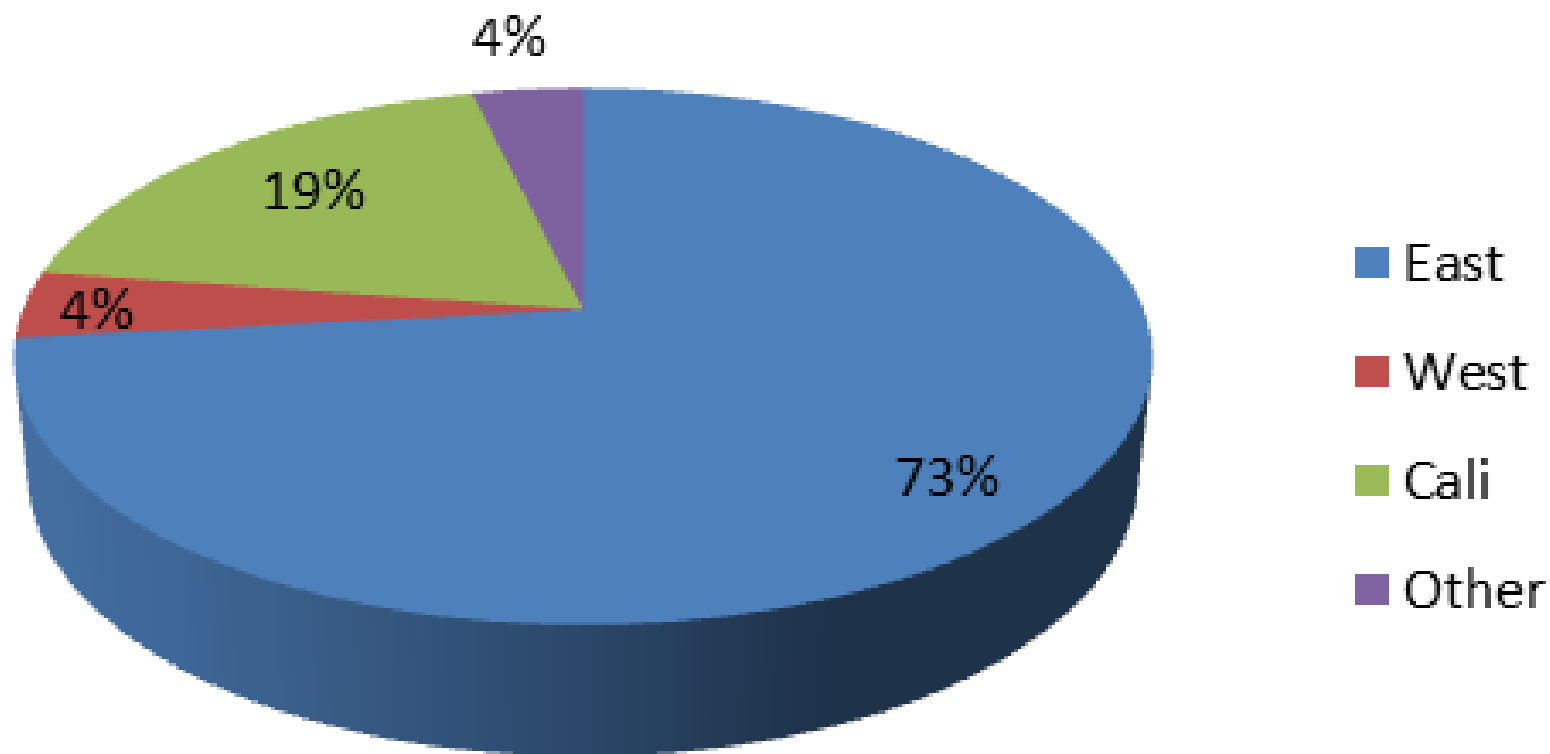
## California Comparisons

- By tonnage, the California market makes up 44% of all USA recyclables exported by vessel, or 22 million tons.
- By dollar value, the East coast states make up 73% of the total export value of the recyclables market.
- The East coast exports more metal and less paper.
- **Still, California controls 19% of the total dollar value in the USA market,**

# U.S. Recycled Exports in 2011 by Area (Tons)



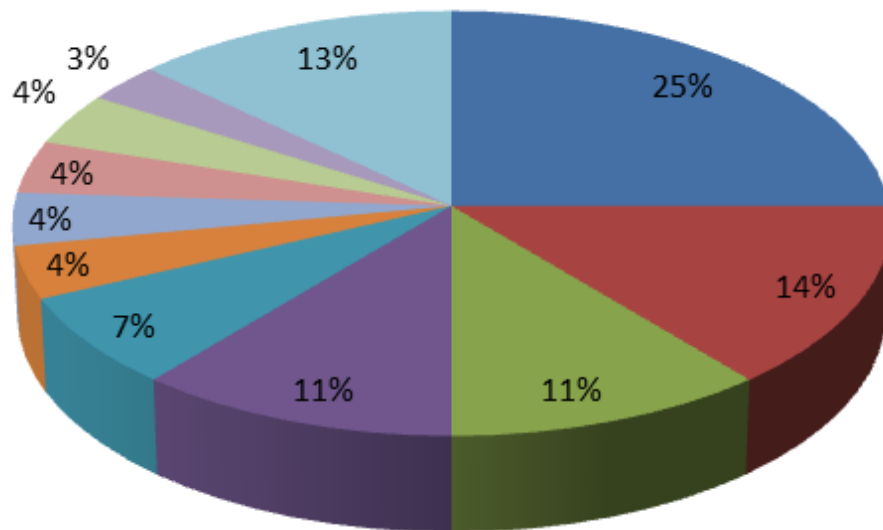
## U.S. Recycled Exports in 2011 by Area (\$1000)



# Analysis of Top Recyclable Commodities by Sea

- Waste and scrap of unbleached paperboard is the largest single commodity category with 25% of California's recyclable exports by sea.
- Heavy melting steel scrap and shredded steel scraps together make up another 25% of California's export market in tons.
- Waste and scrap of unsorted paper and mechanical pulp paper together make up another 18%.
- **Paper has three of the top five commodities.**
- **The top five commodity codes make up 68% of the CA export market.**

## Top Recyclable Commodities from California by Sea



- 25 Waste/ Scrap Unbleached Paper/Board
- 14 Heavy Melting Steel Scrap
- 11 Shredded Steel Scrap
- 11 W/S Unsorted Paper/Board
- 7 W/S Paper/Board Mech Pulp
- 4 Aluminum (not cans)
- 4 Other Ferrous Scrap
- 4 W/S of Bleach/Chem Pulp
- 4 Newsprint W/S Paper
- 3 Other Plastic (Not PET/LDPE/HDPE)
- 13 Other Commodities



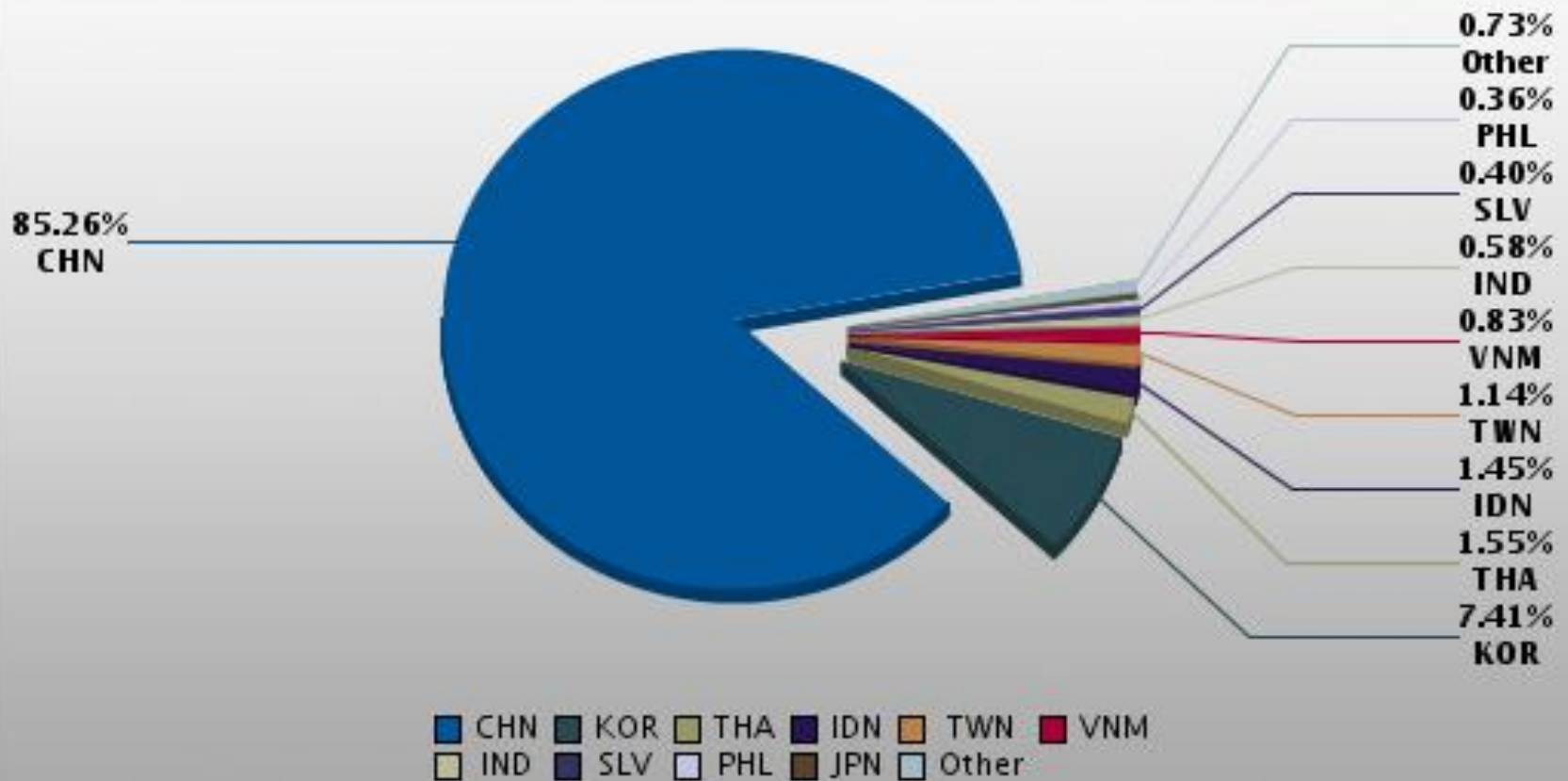
# **Major Commodities Exported from California**

# Mixed Paper Exports from California by Country (1000 Kg)

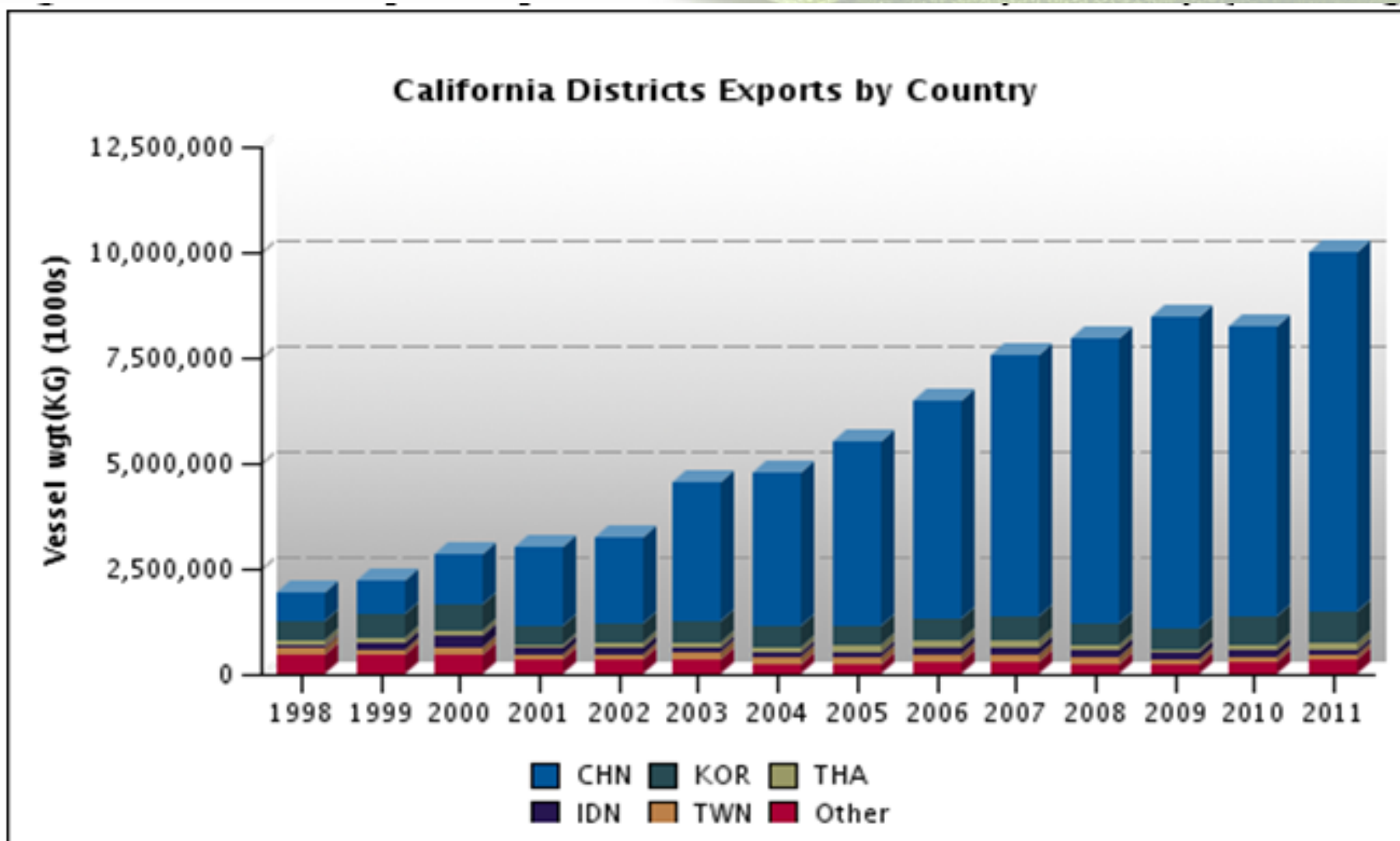
- Total sea-borne CA export weight for paper is 11 million tons or 10 billion Kg.
- The total value is \$1.7 billion.
- 43% of all recyclables exports from CA is mixed paper. Most of this paper is going to China.
- **In tonnage, mixed paper is by far the biggest category of exports.**
- **China is the biggest player in this market receiving 85% of the paper exports out of California ports.**

# Mixed Paper

California Districts Exports by Country  
for 2011 by Vessel wgt(KG) (1000s)



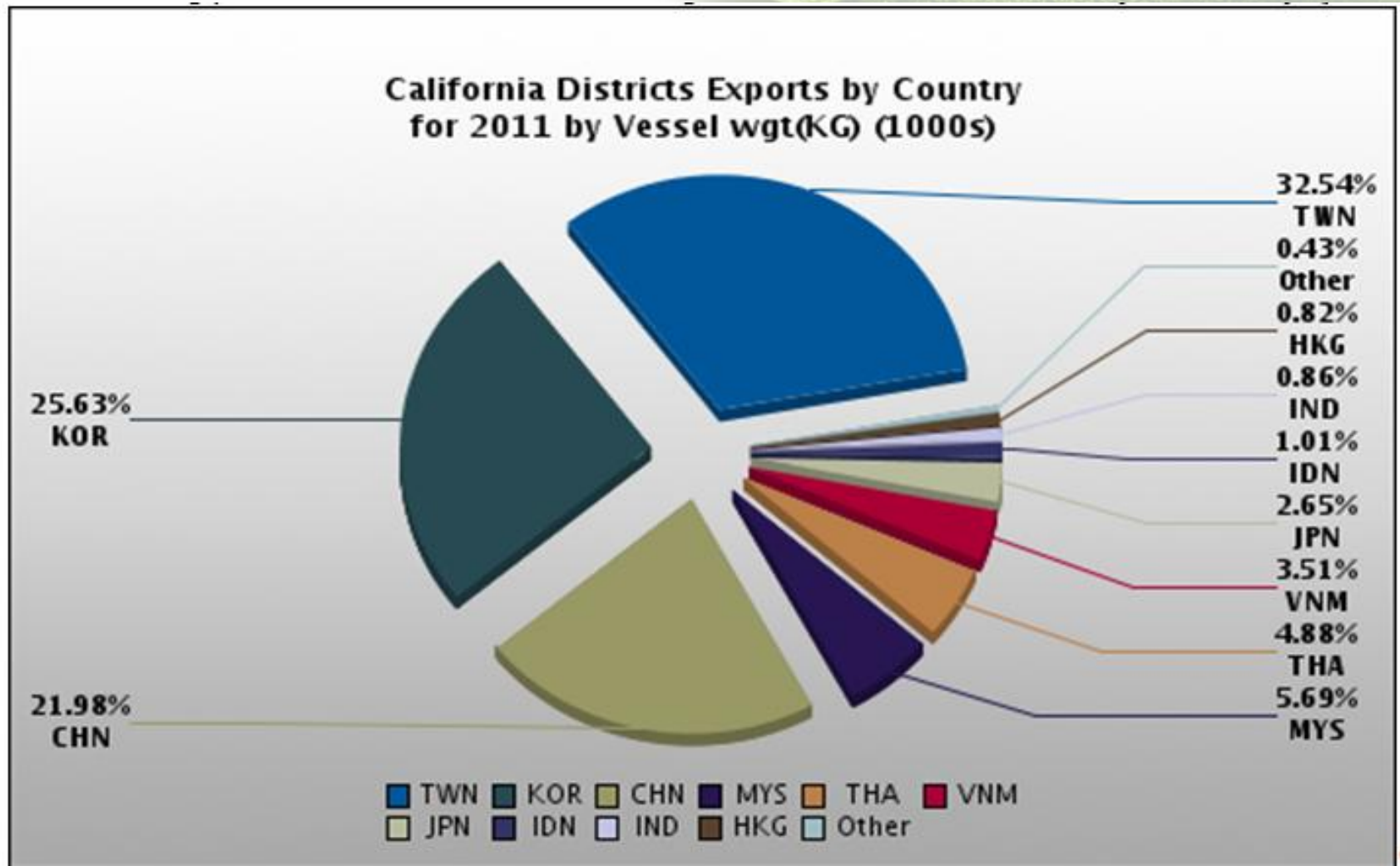
# Mixed Paper Exports from California by Country (1000 Kg)



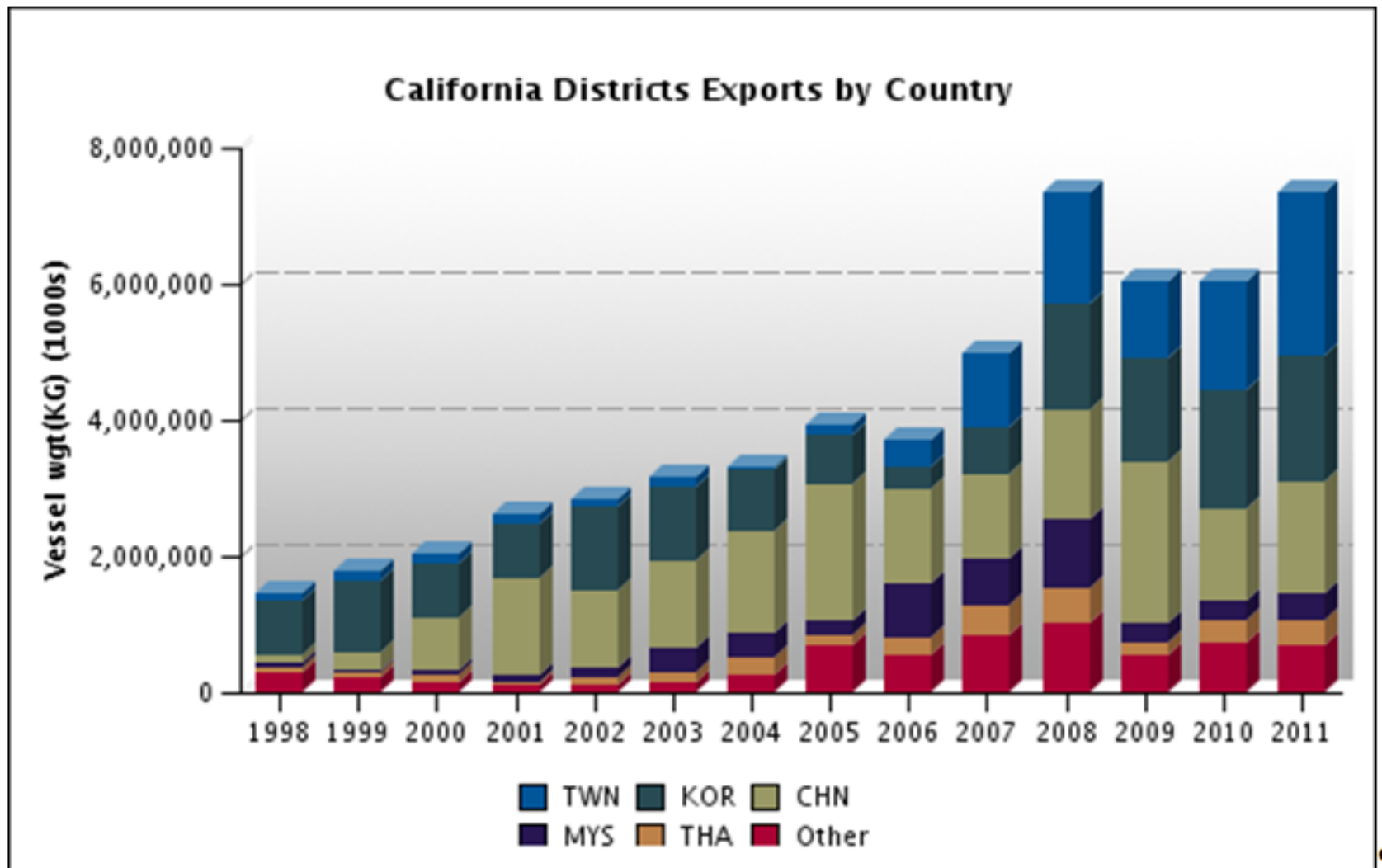
# Ferrous Metal

- Total Ferrous Metal sea-borne export weight is 8.1 million tons or 7.4 billion Kg. The total value is \$3.7 billion.
- **Ferrous metal constitutes over 40% of all CA recyclables exports, and is one of the only categories of exports where many countries have significant market shares.**
- Taiwan imports 33% of ferrous materials from California; South Korea 26%, and China 22%.
- This commodity has steadily been increasing in export tonnage with a significant increase in tonnage exported in 2008, a drop in 2009 and an increase to similar levels in 2011.

# Scrap/Waste Ferrous Metal Exports from California by Country (1000 Kg)



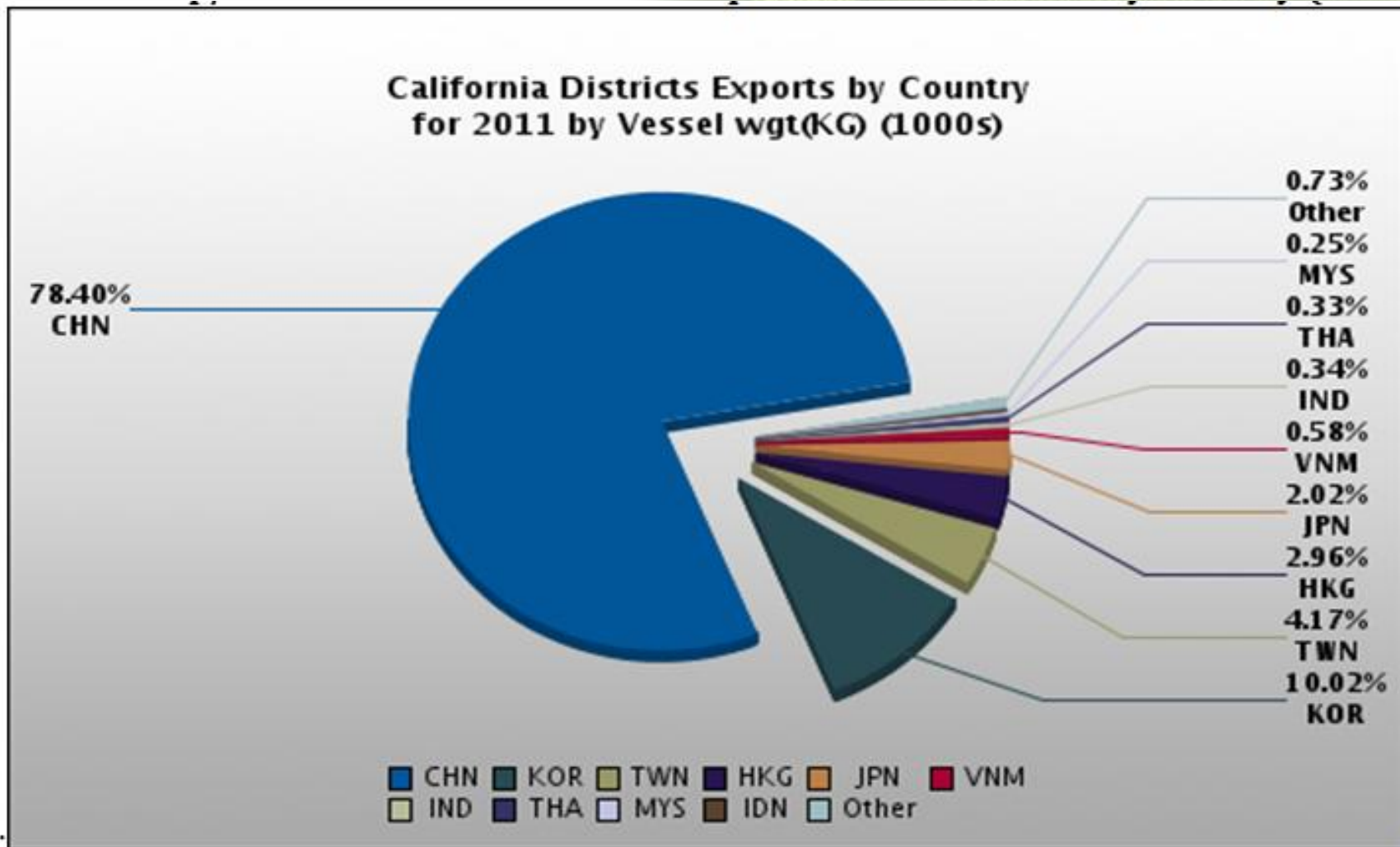
# Scrap/Waste Ferrous Metal Exports from California by Country (1000 Kg)



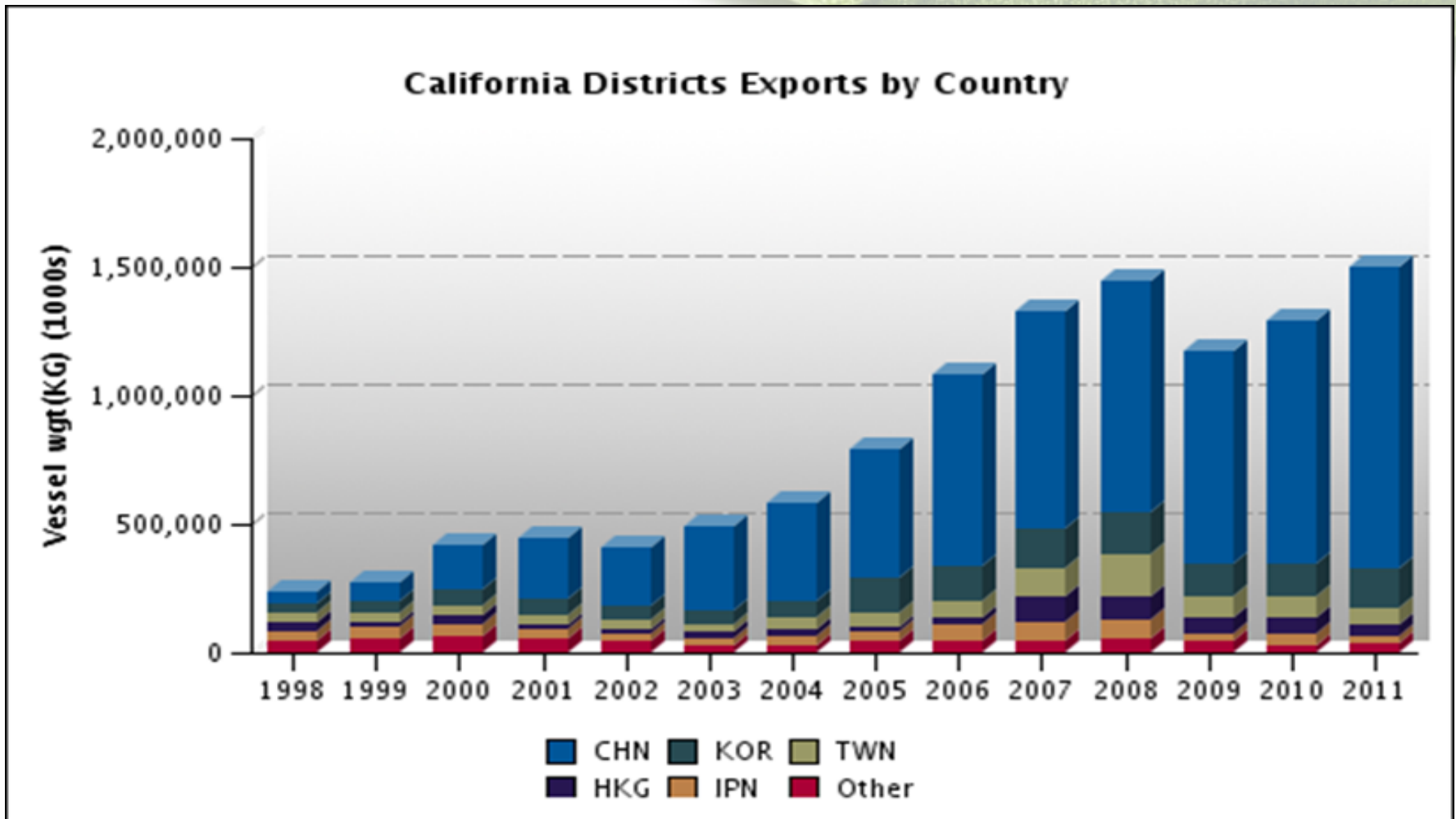
## **Non-Ferrous (Excluding Copper Wire)**

- Total Non-Ferrous sea-borne export weight is 1.7 million tons or 1.5 billion Kg. The total value is \$3.8 billion.
- Like ferrous metals, non-ferrous metals bring a lot of money to California, making up over 40% of California's exported recyclables by dollar value.

# Scrap/Waste Non-Ferrous Metal Exports from California by Country (1000 Kg)



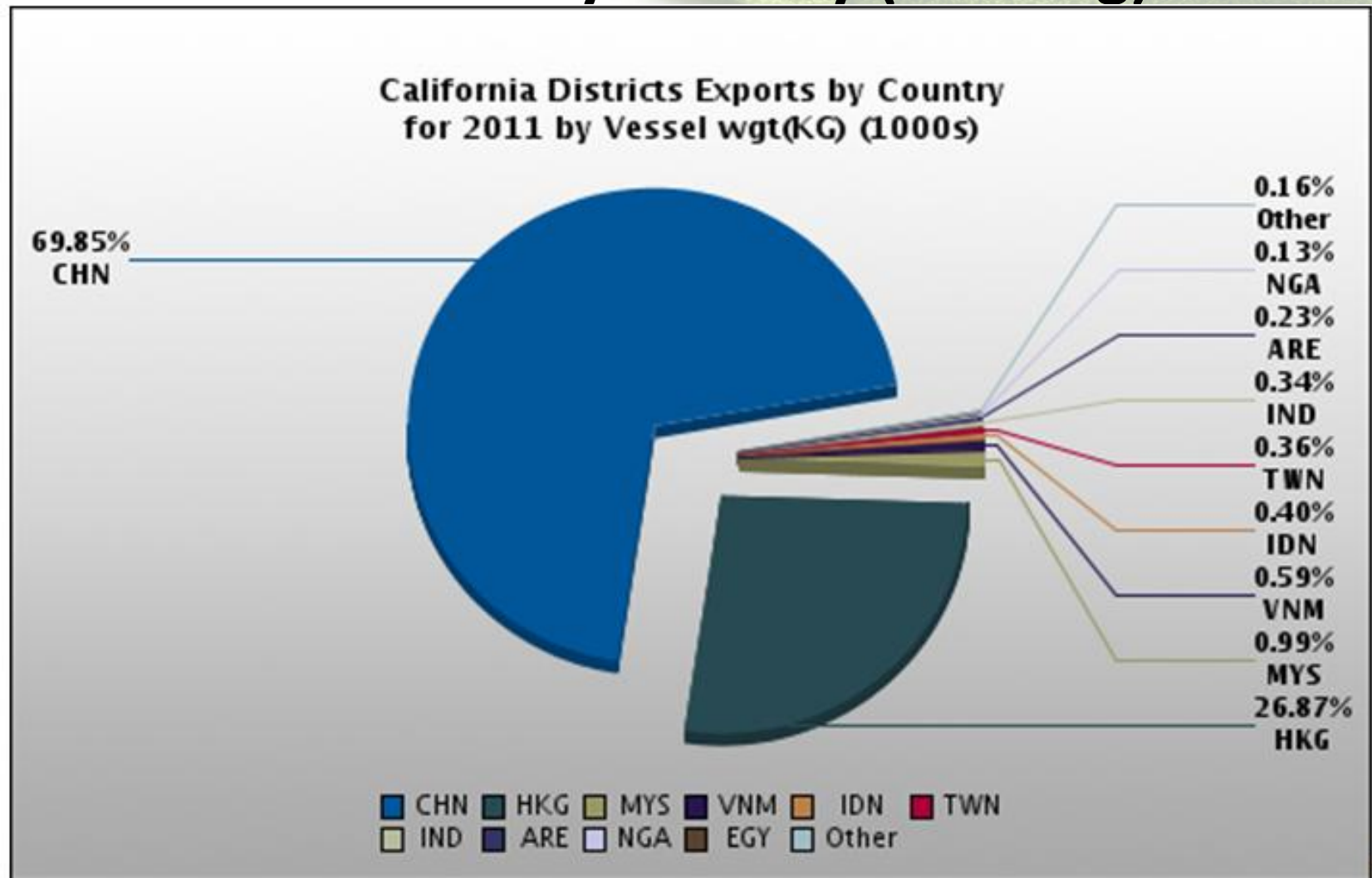
# Scrap/Waste Non-Ferrous Metal Exports from California by Country (1000 Kg)



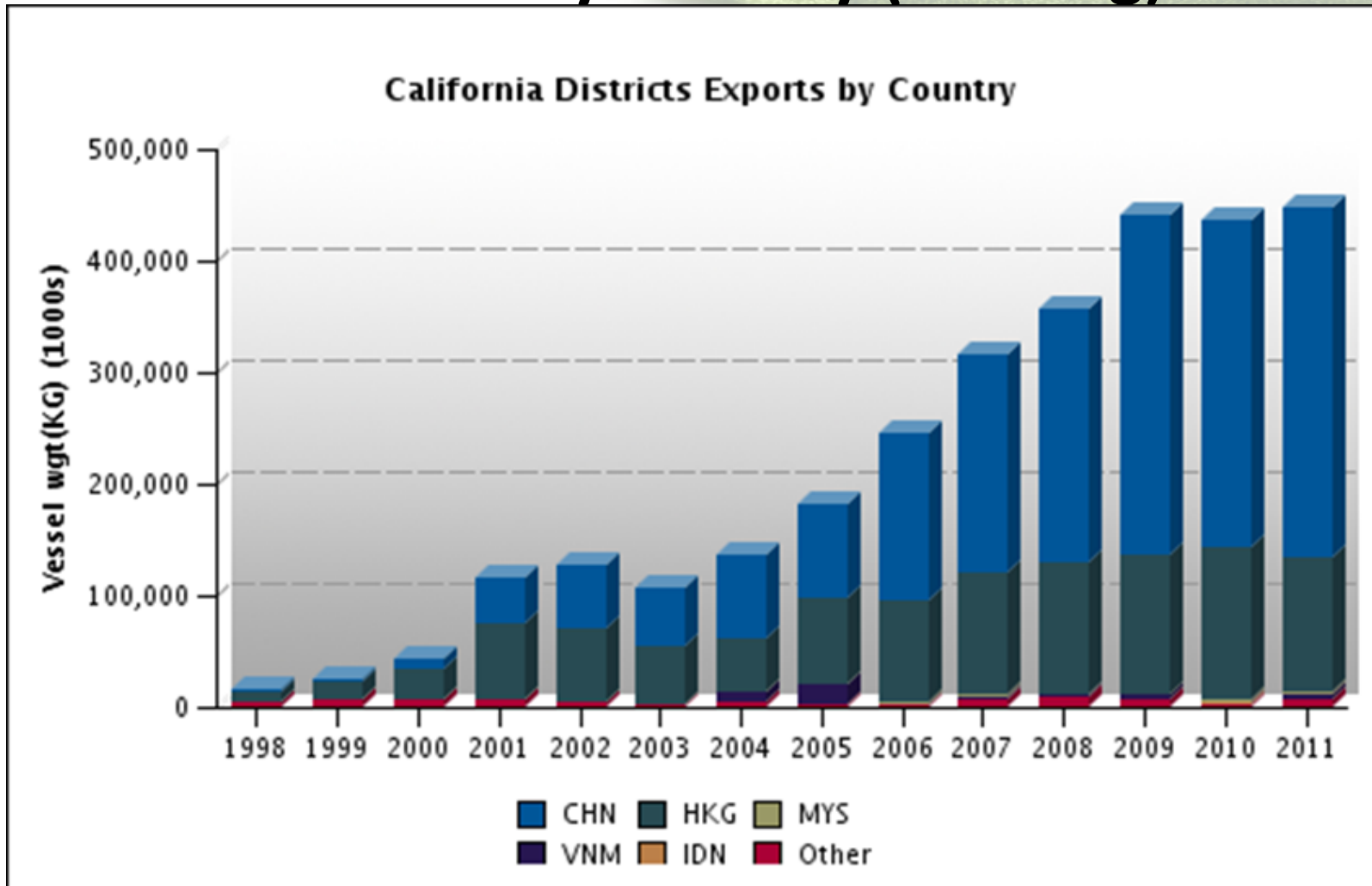
## Selected Recyclable Plastics (#1 #2 #4)

- Total high grade plastic (#1#2#4,) export weight is 493,300 tons or 447 million Kg. The total value is \$185 million.
- Plastics make up a small portion of overall recyclable exports from California.
- China receives 70% of this commodity, with Hong Kong, receiving 27%.
- No other countries compare to the top two countries in this market; importing only 3% combined.
- Much of the growth in this market started after 2005 and was driven by Hong Kong and China.

# Recyclable Plastic Exports (1,2,4) from California by Country (1000 Kg)



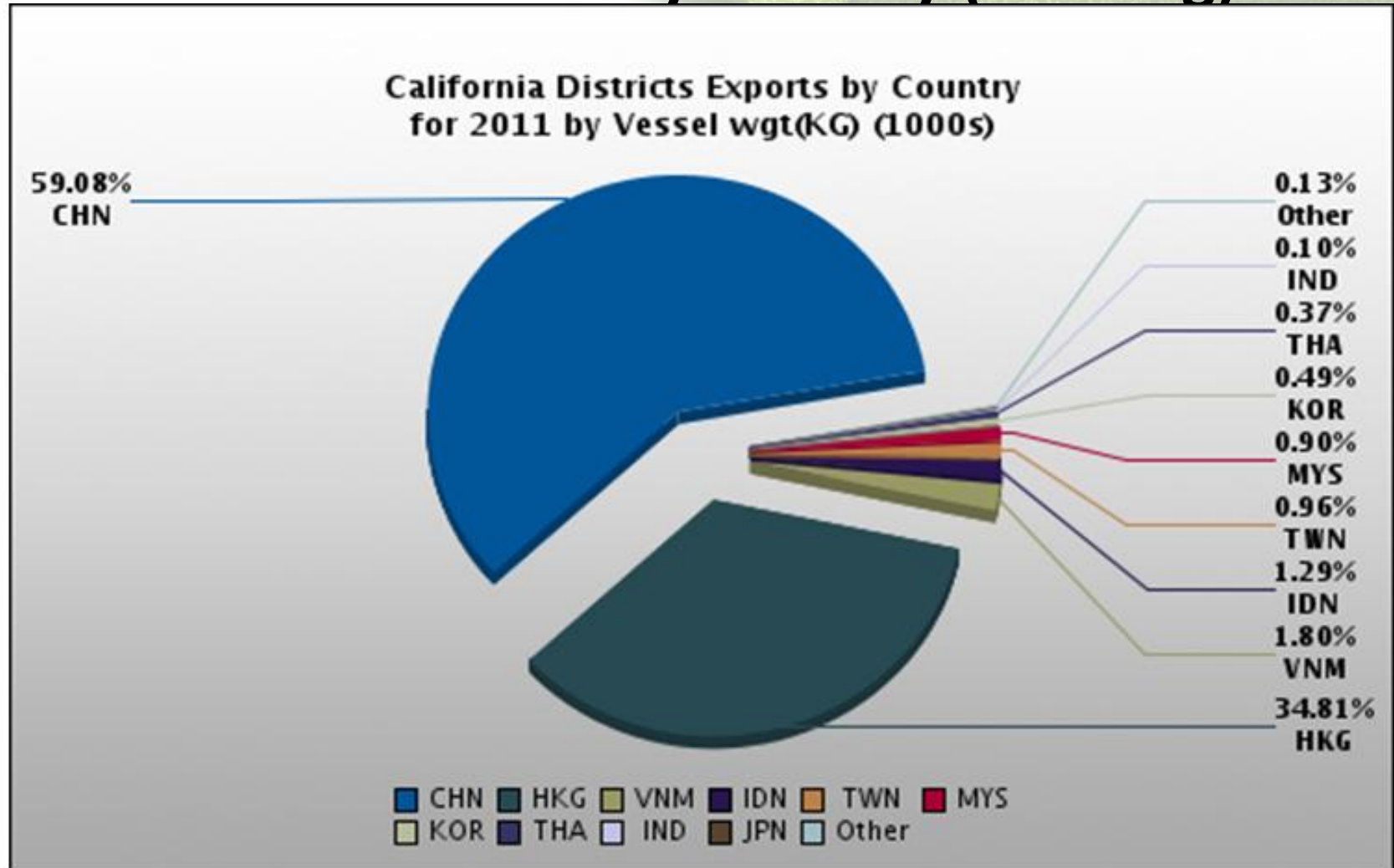
# Recyclable Plastic Exports (#1#2#4) from California by Country (1000 Kg)



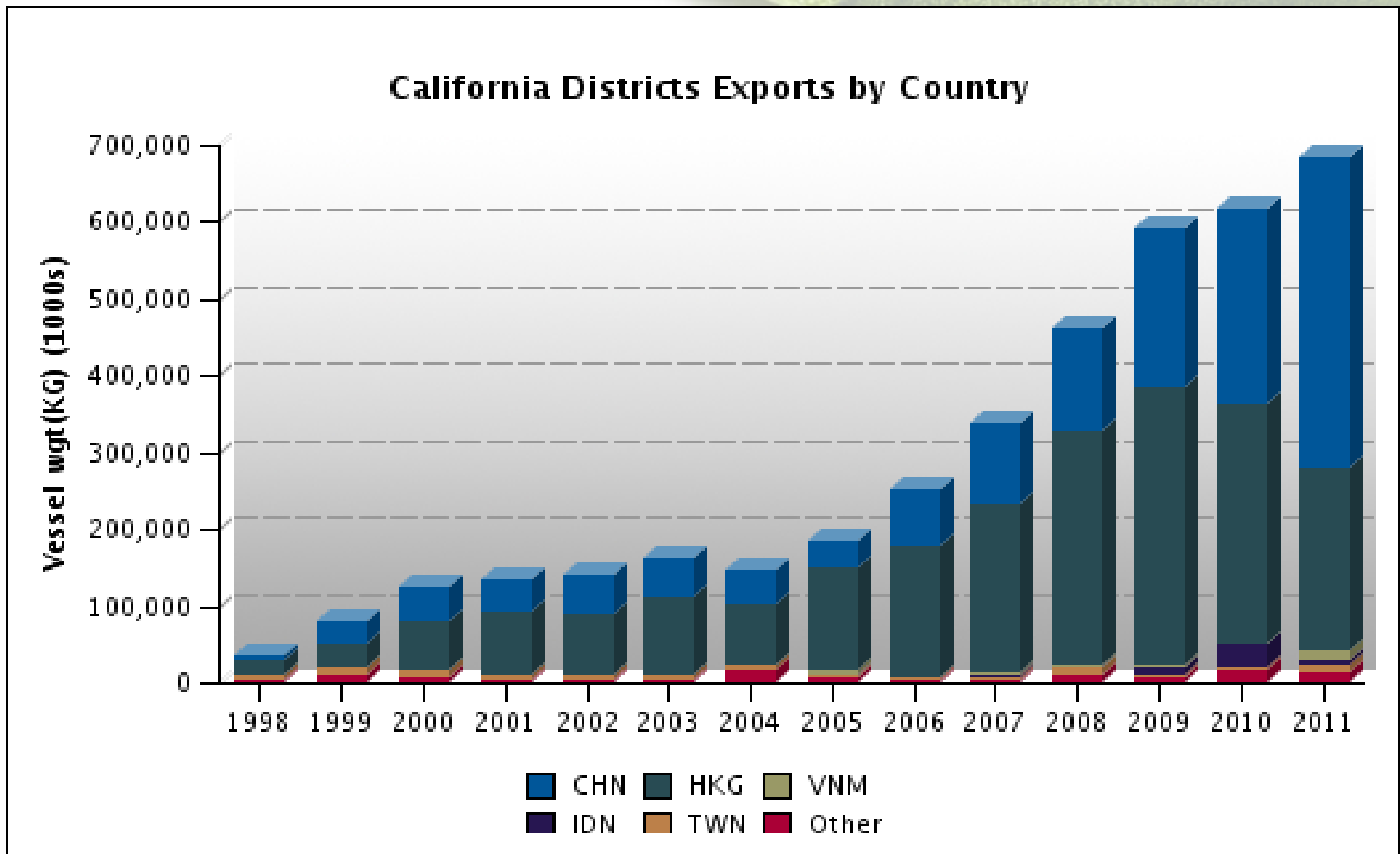
## Other Plastics (#3 #5 #7)

- Total CA sea-borne export weight is 753,900 tons or 684 million Kg.
- The total value is \$327.5 million.
- The other plastic market (#3 #5 #7) is similar to PET/LDPE/HDPE plastic; China receives a 59% share and Hong Kong receives 35%.
- China and Hong Kong have increased their plastic consumption over the past ten years making this commodity more significant in the recyclables market.

# Other Scrap/ Waste Plastic Exports (#3 #5 #7) from California by Country (1000 Kg)



# Other Scrap/ Waste Plastic Exports (#3 #5 #7) from California by Country (1000 Kg)



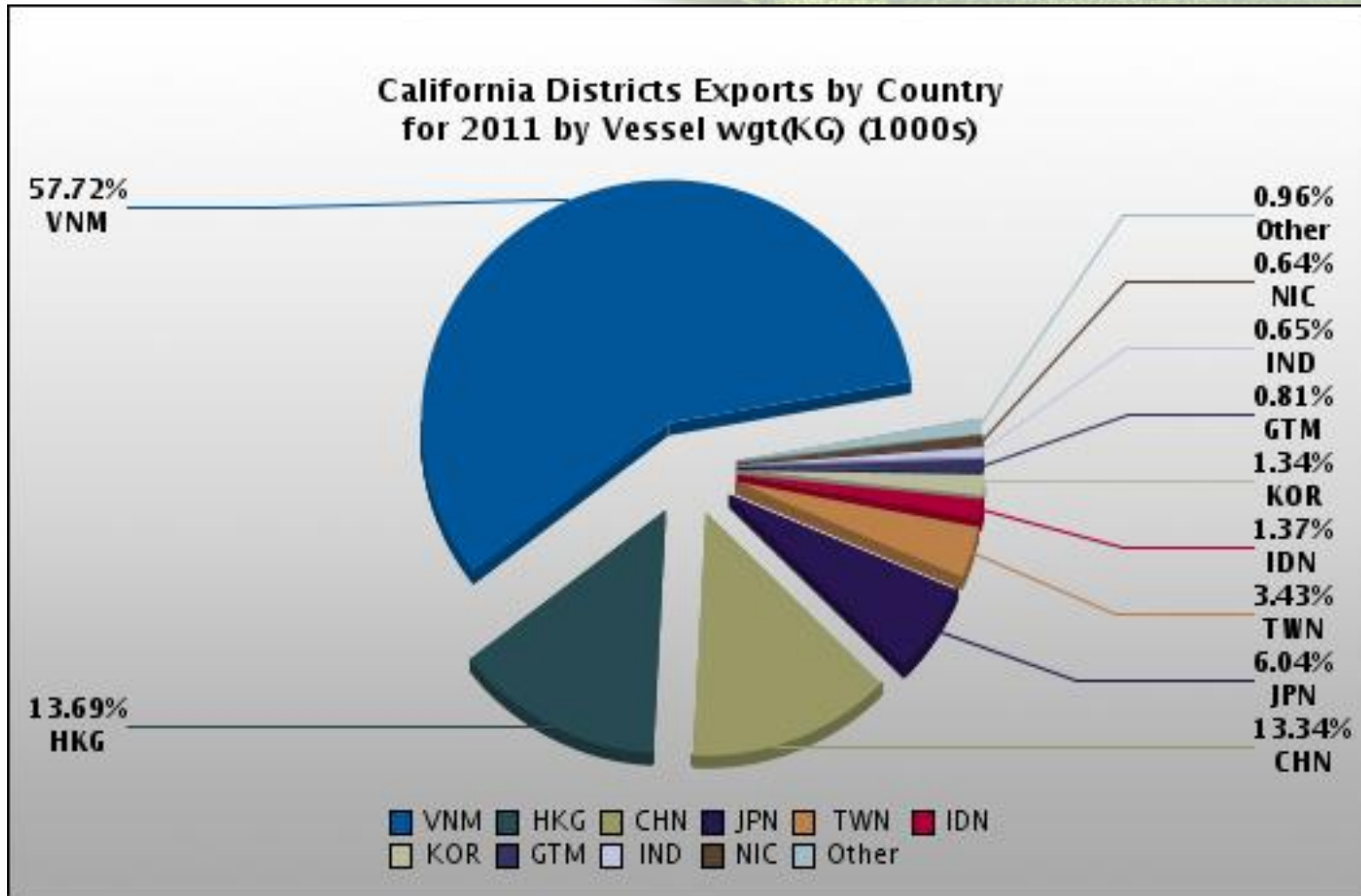
## Tires and Rubber Scrap

- Total CA sea-borne export weight is 74,100 tons or 67.2 million Kg. The total value is \$27.3 million.
- Tires exported by vessel make up a small portion of overall recyclable exports in both tonnage and dollar value.
- Vietnam makes up 58% of the tire products market, while Hong Kong and China are at 14% and 13% respectively.
- Tires have seen substantial tonnage growth over the past five years.

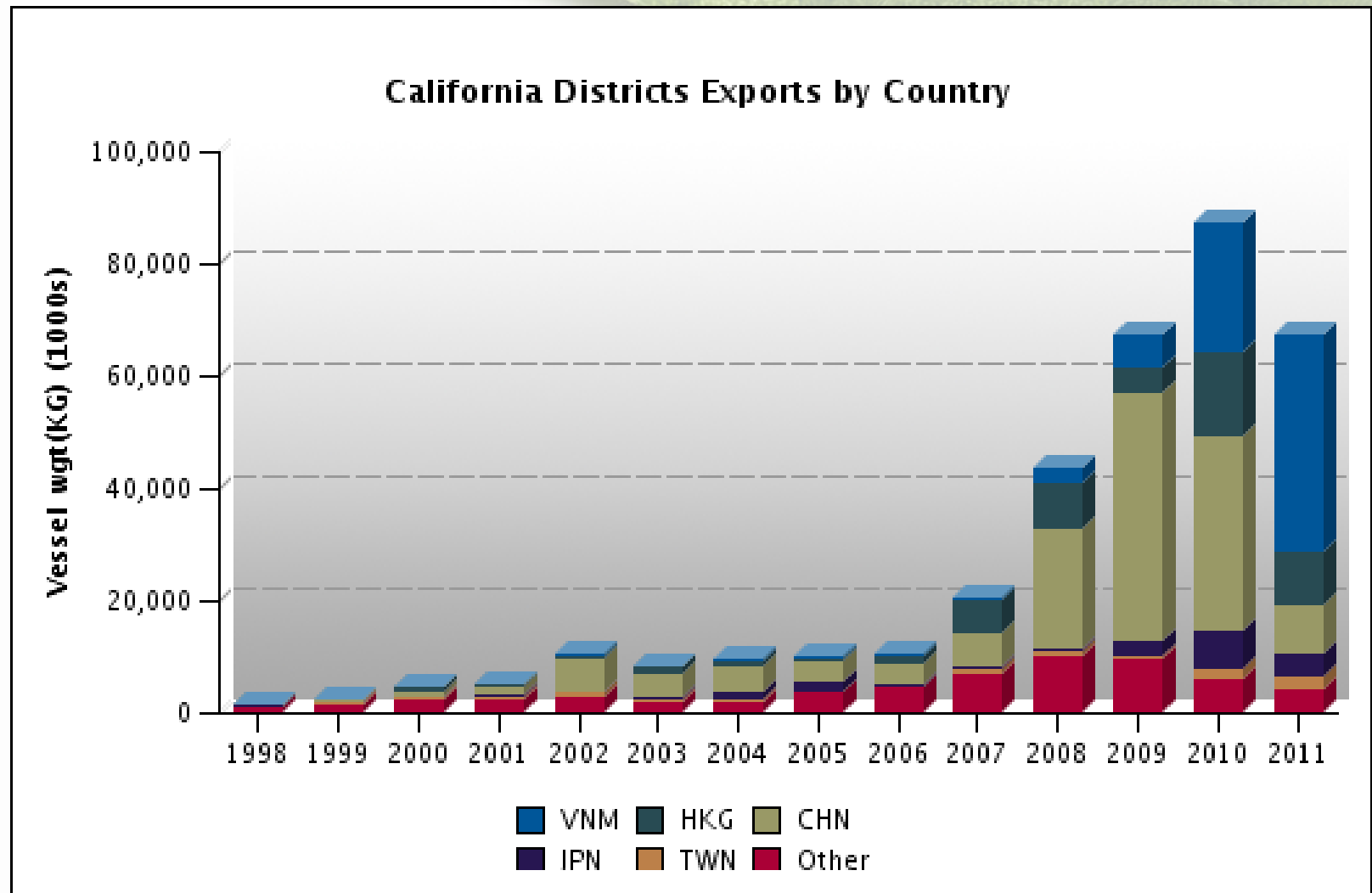
## Tires and Rubber Scrap

- In 2007, major increases were driven by China and then persisted with increased imports by Vietnam.
- Tire exports may change in the coming years due to import restrictions in China.
- The substantial increase in exported rubber and tire waste and scrap starting in 2007 is currently being researched further by staff.

# Tires and Rubber Scraps



# Tires and Rubber Scraps



# Conclusions

- Overall, California ports export more than \$9.5 billion dollars in waste and scrap compared to a total of \$159 billion in exports of all types.
- China receives the most tonnage by weight. The vast majority of material is paper.
- Metals make up more than 80% of the value.
- The majority of recycled plastics and metals flow to China and other East Asian ports.
- An estimated 60% to 80% of material exported out of California ports may have originated in State.

# Acknowledgements

- We would like to acknowledge the contributing work of CalRecycle Policy Development and Analysis staff and Ms. Chantel Crane.
- Ms. Crane, currently a PhD. candidate U.C. Davis Department of Ag & Resources Economics, was an excellent student who gathered much of the data used in this presentation.